WHAT IS CLAIMED IS:

1. A method of manufacturing a cold cathode type electron emitting device, comprising:

forming a pair of electrodes, which are spaced from each other, on a substrate;

forming conductive thin films, which are electrically connected with said pair of electrodes and have a cracked portion therebetween, on a space between said pair of electrodes;

forming conductive deposits on the cracked portion of the conductive thin films to form an electron emission section; and

subjecting said electron emission section to a treatment using plasma to expand a gap between the conductive deposits on the cracked portion.

2. The method according to claim 1, wherein said treatment using plasma is reactive ion etching or chemical dry etching.

3. The method according to claim 1, wherein a gas source of said plasma is a gas containing a halogen compound, and said electron emission section has a carbon-halogen bond in a vicinity of a surface thereof.

4. The method according to claim 3, wherein said halogen compound is at least one compound selected from the group consisting of chloromethane, fluoromethane, chlorofluorocarbon and halon.

5. The method according to claim 1, wherein said

chloromethane is at least one compound selected from the group consisting of carbon tetrachloride (CCl_4), chloroform ($CHCl_3$), methylene chloride (CH_2Cl_2), trichloroethylene (C_2HCl_3) and tetrachloroethylene (C_2Cl_4); said fluoromethane is at least one compound selected from the group consisting of carbon tetrafluoride (CF_4), trifluoromethane (CHF_3), methylene fluoride (CH_2F_2) and tetrafluoroethylene (C_2F_4); said chlorofluorocarbon is at least one compound selected from the group consisting of CCl_3F, CCl_2F_2, CF_3CHCl_2 and CF_3CH_2Cl; and said halon is at least one compound selected from the group consisting of $CBrClF_2$ and $CBrF_3$.

6. The method according to claim 5, wherein said halogen compound is CF_4 and said electron emission section has, in a vicinity of a surface thereof, at least one bond selected from the group consisting of C-F, C-F_2 and C-F_3.

7. The method according to claim 1, wherein a gas source of said plasma is N_2.

8. The method according to claim 1, wherein said gap between said deposits on said cracked portion is extended by about 0.5 nm or more and 1.0 nm or less as a result of said treatment using plasma.

9. The method according to claim 1, wherein said pair of electrodes comprise a transition metal selected from the group consisting of Ni, Au, Ag, Pt and Ir.

10. The method according to claim 1, wherein said conductive thin film comprises a transition metal selected from the group consisting of Ni, Co, Fe, Pd, Au, Pt and Ir.

11. The method according to claim 1, wherein said conductive deposits comprise carbon and are formed by flowing electric current between said pair of electrodes in a gas atmosphere containing carbon atom.

12. The method according to claim 11, wherein said gas atmosphere containing carbon atom comprises at least one compound selected from the group consisting of alcohol, phenol, thiol, ether, aldehyde, ketone, carboxylic acid and amine.

13. A cold cathode type electron emitting device comprising:

a pair of electrodes spaced from each other and formed on a substrate;

conductive thin films formed on a space between said pair of electrodes, said conductive thin film being electrically connected with said pair of electrodes and having a cracked portion therebetween; and

electron emission section formed of conductive deposits formed on said cracked portion of said conductive thin film;

wherein a gap between said conductive deposits on said cracked portion of said electron emission section

is extended through a treatment using plasma.

14. The cold cathode type electron emitting device according to claim 13, wherein said electron emission section has a carbon-halogen bond in a vicinity of a surface thereof.

15. The cold cathode type electron emitting device according to claim 14, wherein said carbon-halogen bond is at least one bond selected from the group consisting of C-F, $C-F_2$ and $C-F_3$.

16. The cold cathode type electron emitting device according to claim 13, wherein said substrate comprises a material selected from the group consisting of quartz glass, quartz, sodium glass, soda-lime glass, borosilicate glass, phosphorus glass, Al_2O_3 and AlN.

17. The cold cathode type electron emitting device according to claim 13, wherein said pair of electrodes comprise a transition metal selected from the group consisting of Ni, Au, Ag, Pt and Ir.

18. The cold cathode type electron emitting device according to claim 13, wherein said conductive thin film comprises a transition metal selected from the group consisting of Ni, Co, Fe, Pd, Au, Pt and Ir.

19. The cold cathode type electron emitting device according to claim 13, wherein said conductive deposits comprise carbon.

20. A method of driving a cold cathode type electron emitting device according to claim 13, wherein

said cold cathode type electron emitting device is driven using a driving voltage which is higher than a maximum voltage to be employed in a manufacturing process of said cold cathode type electron emitting device.